

Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of claims:

1. (Currently Amended) A system for detecting and communicating the position of a pusher assembly on a shelf, comprising:

an indicia strip containing a pattern of bits;

a sensor assembly comprising a transmitter configured to send a signal to a processing device, the sensor assembly configured to detect the position of the pusher assembly by scanning the indicia strip and determining a code based on the pattern of bits scanned, the sensor assembly positioned on a pusher and configured to transmit the code representative of the position of the pusher assembly for further processing; and

a the processing device configured to receive the transmitted code, and calculate the distance between the pusher assembly and an end of the shelf based on the transmitted code, and wherein the processing device is configured to provide a notification concerning the position of the pusher assembly.

2. (Canceled)

3. (Previously presented) The system of claim 1, wherein the transmission between the sensor assembly and the processing device is wireless.

4. (Previously presented) The system of claim 1, wherein the transmission between the sensor assembly and the processing device is over a network.

5. (Canceled)

6. (Original) The system of claim 1, wherein the sensor assembly comprises an optical sensor.

7. (Original) The system of claim 1, wherein the sensor assembly comprises a capacitive proximity sensor.

8. (Original) The system of claim 1, wherein the sensor assembly comprises a magnetic proximity sensor.

9. (Original) The system of claim 1, wherein the sensor assembly comprises an inductive proximity sensor.

10. (Currently Amended) The system of claim 1, wherein the sensor assembly further comprises ~~a transmitter and a receiver~~, wherein the transmitter is configured to send a signal to the receiver, the sensor assembly further comprising a timing device, wherein the timing device is used to measure the time for the signal to travel from the transmitter to the receiver.

11. (Currently Amended) The system of claim 1, wherein the sensor assembly further comprises ~~a transmitter/receiver~~, a radio frequency identifying transponder, and a timing device, wherein the transmitter/receiver is configured to transmit an activation signal to the radio frequency identifying transponder, ~~the transmitter/receiver further is~~ configured to receive a responsive signal from the radio frequency identifying transponder in response to the activation signal, and the timing device configured to measure the delay between the transmitting of the activation signal and the receiving of the responsive signal.

12. (Previously Presented) The system of claim 1, wherein the processing device receives updated codes in real time.

13. (Currently Amended) A system for determining the relative location of a pusher assembly from the front of a shelf, comprising:

an indicia strip containing a pattern of bits relating to the position of the pusher assembly;

a sensor connected to the pusher assembly, the sensor positioned on a pusher and configured to scan the pattern of bits on the indicia strip;

a controller for activating the sensor and for processing the pattern of bits scanned by the sensor, wherein the pattern of bits scanned can be used to determine the position of the pusher assembly; and

a store computer;

wherein the controller is configured to provide the scanned pattern of bits from the sensor to a store computer, and wherein the store computer is configured to calculate the distance between the pusher assembly and the front of the shelf based on the pattern of bits and to provide a notification concerning the position of the pusher assembly.

14. (Original) The system of claim 13, wherein the indicia is associated with a self-coiling sheet.

15. (Canceled)

16. (Previously Presented) The system of claim 13, wherein the controller provides data to the computer via a wireless signal.

17. (Currently Amended) A system for inventory management on a shelf, including a pusher assembly on the shelf, comprising:

an indicia strip mounted on a coiled spring on the pusher assembly and configured to provide a representation in a pattern reflecting the position of the pusher assembly on the shelf;

a sensor assembly comprising a transmitter configured to send a signal to a store computer, the sensor assembly configured to transmit a pusher code, the pusher code based on the representation on the indicia strip; and

at the store computer configured to receive the pusher code from the sensor assembly, to calculate the distance between the pusher assembly and an end of the shelf based on the pusher code and to provide a notification concerning the position of the pusher assembly.

18. (Original) The system of claim 17, wherein the sensor assembly transmits the pusher code wirelessly.

19. (Original) The system of claim 17, wherein the indicia strip is associated with a self coiling sheet.

20. (Original) The system of claim 19, where the indicia strip comprises a Gray Code pattern.

21. (Currently Amended) A system for aiding in the prevention of theft of inventory, comprising:

a sensor assembly comprising a transmitter configured to send a signal to a store computer, the sensor assembly associated with a pusher assembly having an indicia strip, the sensor assembly positioned on a pusher and configured to scan a pattern of bits on the indicia strip to determine a code based on the pattern of bits scanned and transmit the code relating to the position of the pusher assembly; and

a the store computer configured to receive the code and to transmit a signal in response to the code and compare the code to a previous pusher code to determine a movement of the pusher assembly and a rate of change in a product level, and further configured to provide a notification that a deviation in the typical movement of the pusher assembly and rate of change of product level has occurred.

22. (Original) The system of claim 21, further comprising a security camera configured to respond to the signal, the response including the focusing in the direction of the sensor assembly.

23. (Canceled)

24. (Previously presented) The system of claim 22, where the notification is sent to in-store security personnel.

25. (Original) The system of claim 21, wherein the sensor assembly monitors the position of the pusher in real time.

26. (Currently Amended) A system for inventory management, comprising:
an indicia strip mounted on a coiled spring on the pusher assembly and configured to provide a representation in a pattern reflecting a position of a pusher assembly;
a sensor assembly comprising a transmitter configured to send a signal to a store computer, the sensor assembly configured to scan and transmit a pusher code based on the representation contained on the indicia strip;
an access point configured to receive the pusher code from the sensor assembly and to transmit a signal;
a central access point configured to received the signal; and
~~a~~ the store computer configured to process the signal received by the central access point, calculate the distance between the pusher assembly and an end of a shelf based on the signal and to provide a notification of the position of the pusher assembly.

27. (Original) The system of claim 26, wherein the sensor assembly transmits the pusher code in a wireless manner.

28. (Original) The system of claim 26, where the representation on the indicia strip is stored in Gray Code.

29. (Original) The system of claim 26, wherein the indicia strip is configured so that the representation is reflective of not more than four regions.

30. (Previously Presented) The system of claim 26, wherein the indicia strip is configured so that the representation is reflective of not more than ten regions.

31. (Currently Amended) A inventory management system for a facing on a shelf, comprising:

a sensor assembly comprising a transmitter configured to send a signal to a store computer, the sensor assembly configured for automatic determination of the amount of

inventory in a facing; the sensor assembly configured to scan an indicia strip mounted on a coiled spring on the pusher assembly, the indicia strip containing data including a pattern representing the position of a pusher assembly and transmit the data representing the position of a pusher assembly; and

a ~~the~~ store computer configured to receive and process data from the sensor assembly, calculate the distance between the pusher assembly and an end of the shelf based on the data from the sensor assembly, and to provide a notification of the relative position of the pusher assembly.

32. (Original) The system of claim 31, wherein the sensor transmits the data in a wireless manner.

33. (Original) The system of claim 31, wherein the sensor assembly is mounted to the pusher assembly.

34. (Currently Amended) A system for sensing the removal of a product from a shelf, comprising:

a pusher assembly mounted to the shelf;

an indicia strip mounted on a coiled spring on the pusher assembly and configured to provide a representation in a pattern reflecting the position of the pusher assembly;

a sensor associated with the pusher assembly, the sensor configured to scan the indicia strip; and

a controller configured to measure the position of the pusher assembly via the sensor, the controller being responsive to movement of the pusher assembly, the controller further configured to calculate a rate of change in a product level and provide notification that a deviation in amount of product typically removed from the shelf has occurred.

35. (Original) The system of claim 34, wherein the indicia strip is not more than six bits wide.

36. (Original) The system of claim 34, wherein the indicia strip is not more than two bits wide.

37-40. (Canceled)

41. (Currently Amended) An inventory management system for a store, comprising:
a sensor assembly comprising a transmitter configured to send a signal to a store computer, the sensor assembly configured to automatically provide data regarding inventory in a
facing on a shelf, the data including a pattern on an indicia strip representing the position of a
pusher assembly, the sensor assembly positioned on a pusher; and

a the store computer configured to receive the data from the sensor assembly, wherein the store computer is configured to calculate the distance between the pusher assembly and an end of a shelf based on the signal and determine the level of inventory in response to the data provided by the sensor assembly based on the position of the pusher assembly, and wherein the store computer is further configured to provide notification of the level of inventory on the shelf.

42. (Original) The inventory management system of claim 41, wherein the data is provided to the store computer over a network.

43. (Original) The inventory management system of claim 41, wherein the sensor assembly comprises an optical scanner.

44. (Original) The inventory management system of claim 41, wherein the sensor assembly and the store computer are configured for two-way communication and the sensor provides data in response to a query from the store computer.

45. (Currently Amended) A system for automatic ordering of a product, comprising:
a pusher assembly configured to move the product toward a front side of a shelf, the
pusher assembly having an indicia strip containing a pattern of bits;

a sensor assembly comprising a transmitter configured to send a signal to a store computer, the sensor assembly positioned on a pusher and configured to sense the position of the pusher assembly by scanning the indicia strip containing a pattern of bits and determining the position of the pusher assembly based on the pattern of bits scanned, and transmit a signal regarding the position of the pusher; and

a-the store computer configured to receive the signal, calculate the distance between the pusher assembly and a front end of the shelf based on the signal, determine the level of inventory, and to order additional inventory in response to the signal.

46. (Original) The system of claim 45, wherein the store computer determines the level of the product remaining on the shelf based on the signal received from the sensor assembly.

47. (Original) The system of claim 45, wherein the sensor assembly transmits the signal in a wireless manner.

48. (Currently Amended) A system for use in determining the amount of product on a shelf, comprising:

a pusher assembly, the pusher assembly including a pusher and a coiled spring;

an indicia strip mounted on the coiled spring, the indicia strip containing at least two representations in a pattern associated with the position of the pusher;

a sensor assembly comprising a transmitter configured to send a signal to a processing device, the sensor assembly configured to scan the indicia strip, the sensor assembly including an optical sensor and a controller, the controller being configured to operate the optical sensor so as to obtain a data reflecting the representation scanned by the sensor, wherein the sensor assembly is configured to transmit a pusher code related to the scanned representation for further processing by a-the processing device; and

a power source for powering the sensor assembly,

wherein the processing device is configured to calculate the distance between the pusher assembly and an end of a shelf based on the signal and determine the amount of product on the shelf.

49. (Original) The system of claim 48, wherein the sensor assembly further comprises a receiver, the sensor assembly being configured to transmit a pusher code in response to a query.